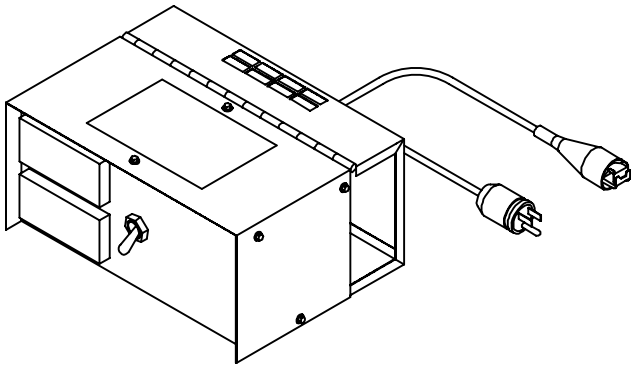
May 1992 Form: OM-867C
Effective With Style No. KA26

Model(s): DIGI-METER 600
DIGI-METER 1500
DIGI-METER 1500 AC/DC



OWNER'S MANUAL

▶ **IMPORTANT:** *Read and understand the entire contents of both this manual and the power source manual used with this unit, with special emphasis on the safety material throughout the manual, before installing, operating, or maintaining this equipment. This unit and these instructions are for use only by persons trained and experienced in the safe operation of welding equipment. Do not allow untrained persons to install, operate, or maintain this unit. Contact your distributor if you do not fully understand these instructions.*

MILLER ELECTRIC Mfg. Co.
A Miller Group Ltd., Company

P.O. Box 1079
Appleton, WI 54912 USA
Tel. 414-734-9821

MILLER'S TRUE BLUE™ LIMITED WARRANTY

Effective January 1, 1992
(Equipment with a serial number preface of "KC" or newer)

This limited warranty supersedes all previous MILLER warranties and is exclusive with no other guarantees or warranties expressed or implied.

LIMITED WARRANTY – Subject to the terms and conditions below, MILLER Electric Mfg. Co., Appleton, Wisconsin, warrants to its original retail purchaser that new MILLER equipment sold after the effective date of this limited warranty is free of defects in material and workmanship at the time it is shipped by MILLER. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

Within the warranty periods listed below, MILLER will repair or replace any warranted parts or components that fail due to such defects in material or workmanship. MILLER must be notified in writing within thirty (30) days of such defect or failure, at which time MILLER will provide instructions on the warranty claim procedures to be followed.

MILLER shall honor warranty claims on warranted equipment listed below in the event of such a failure within the warranty time periods. All warranty time periods start on the date that the equipment was delivered to the original retail purchaser, or one year after the equipment is sent to the distributor.

1. 5 Years Parts – 3 Years Labor
   * Original main power rectifiers
2. 3 Years — Parts and Labor
   * Transformer/Rectifier Power Sources
   * Plasma Arc Cutting Power Sources
   * Semi-Automatic and Automatic Wire Feeders
   * Robots
3. 2 Years — Parts and Labor
   * Engine Driven Welding Generators
     (NOTE: Engines are warranted separately by the engine manufacturer.)
   * Air Compressors
4. 1 Year — Parts and Labor
   * Motor Driven Guns
   * Process Controllers
   * Water Coolant Systems
   * HF Units
   * Grids
   * Spot Welders
   * Load Banks
   * SDX Transformers
   * Running Gear/Trailers
   * Field Options

   (NOTE: Field options are covered under True Blue™ for the remaining warranty period of the product they are installed in, or for a minimum of one year — whichever is greater.)
5. 6 Months — Batteries
6. 90 Days — Parts and Labor
   * MIG Guns/TIG Torches
   * Plasma Cutting Torches
   * Remote Controls
   * Accessory Kits
   * Replacement Parts

MILLER'S True Blue™ Limited Warranty shall not apply to:

1. Items furnished by MILLER, but manufactured by others, such as engines or trade accessories. These items are covered by the manufacturer's warranty, if any.
2. Consumable components; such as contact tips, cutting nozzles, contactors and relays or parts that fail due to normal wear.
3. Equipment that has been modified by any party other than MILLER, or equipment that has been improperly installed, improperly operated or misused based upon industry standards, or equipment which has not had reasonable and necessary maintenance, or equipment which has been used for operation outside of the specifications for the equipment.

MILLER PRODUCTS ARE INTENDED FOR PURCHASE AND USE BY COMMERCIAL/INDUSTRIAL USERS AND PERSONS TRAINED AND EXPERIENCED IN THE USE AND MAINTENANCE OF WELDING EQUIPMENT.

In the event of a warranty claim covered by this warranty, the exclusive remedies shall be, at MILLER'S option: (1) repair; or (2) replacement; or, where authorized in writing by MILLER in appropriate cases, (3) the reasonable cost of repair or replacement at an authorized MILLER service station; or (4) payment of or credit for the purchase price (less reasonable depreciation based upon actual use) upon return of the goods at customer's risk and expense. MILLER'S option of repair or replacement will be F.O.B., Factory at Appleton, Wisconsin, or F.O.B. at a MILLER authorized service facility as determined by MILLER. Therefore no compensation or reimbursement for transportation costs of any kind will be allowed.

TO THE EXTENT PERMITTED BY LAW, THE REMEDIES PROVIDED HEREIN ARE THE SOLE AND EXCLUSIVE REMEDIES. IN NO EVENT SHALL MILLER BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LOSS OF PROFIT), WHETHER BASED ON CONTRACT, TORT OR ANY OTHER LEGAL THEORY.

ANY EXPRESS WARRANTY NOT PROVIDED HEREIN AND ANY IMPLIED WARRANTY, GUARANTY OR REPRESENTATION AS TO PERFORMANCE, AND ANY REMEDY FOR BREACH OF CONTRACT TORT OR ANY OTHER LEGAL THEORY WHICH, BUT FOR THIS PROVISION, MIGHT ARISE BY IMPLICATION, OPERATION OF LAW, CUSTOM OF TRADE OR COURSE OF DEALING, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, WITH RESPECT TO ANY AND ALL EQUIPMENT FURNISHED BY MILLER IS EXCLUDED AND DISCLAIMED BY MILLER.

Some states in the U.S.A. do not allow limitations of how long an implied warranty lasts, or the exclusion of incidental, indirect, special or consequential damages, so the above limitation or exclusion may not apply to you. This warranty provides specific legal rights, and other rights may be available, but may vary from state to state.

In Canada, legislation in some provinces provides for certain additional warranties or remedies other than as stated herein, and to the extent that they may not be waived, the limitations and exclusions set out above may not apply. This Limited Warranty provides specific legal rights, and other rights may be available, but may vary from province to province.

RECEIVING-HANDLING

Before unpacking equipment, check carton for any damage that may have occurred during shipment. File any claims for loss or damage **with the delivering carrier**. Assistance for filing or settling claims may be obtained from distributor and/or equipment manufacturer's Transportation Department.

When requesting information about this equipment, always provide Model Designation and Serial or Style Number.

Use the following spaces to record Model Designation and Serial or Style Number of your unit. The information is located on the rating label or nameplate.

Model _____

Serial or Style No. _____

Date of Purchase _____

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SECTION 1 – SAFETY SIGNAL WORDS

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The following safety alert symbol and signal words are used throughout this manual to call attention to and identify different levels of hazard and special instructions.

⚠ WARNING

WARNING statements identify procedures or practices which must be followed to avoid serious personal injury or loss of life.

⚠ CAUTION

CAUTION statements identify procedures or practices which must be followed to avoid minor personal injury or damage to this equipment.

▶**IMPORTANT:** *statements identify special instructions necessary for the most efficient operation of this equipment.*

SECTION 2 – SPECIFICATIONS

Table 2-1. Meter Specifications

Specification	Description		
Type Of Input Power	115 Volts AC, 50/60 Hz, 0.5 Ampere		
Input Power Cord With Plug	8 ft. (2.4 m)		
Overall Dimensions	See Figure 3-1		
	600	**1500**	**1500 AC/DC**
Weight	Net: 11 lbs. (5 kg); Ship: 12.5 lbs. (5.7 kg)	Net: 11 lbs. (5 kg); Ship: 12.5 lbs. (5.7 kg)	Net: 13.5 lbs. (6.1 kg); Ship: 15 lbs. (7 kg)
Max. Capacity At 100% Duty Cycle	600 Amps At 100 Volts DC	1500 Amps At 100 Volts DC	1500 Amps At 100 Volts AC/DC

SECTION 3 – INSTALLATION

⚠ WARNING

ELECTRIC SHOCK can kill.

- Do not touch live electrical parts.
- Turn OFF welding power source and disconnect input power before inspecting or installing. Stop engine on welding generator.

FUMES can be hazardous; LACK OF FRESH AIR AND PROPER VENTILATION can be harmful.

- Do not breathe welding fumes.
- Place unit only where there is a good fresh air supply and proper ventilation.

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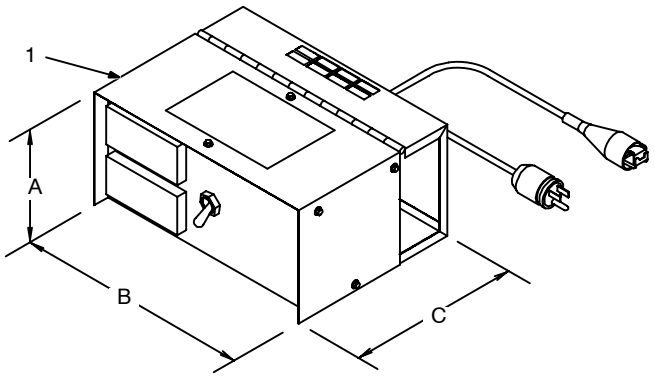
3-1. Location



Turn OFF welding power source.

1 Meter

Place meter on bench, welding power source, or other convenient location.

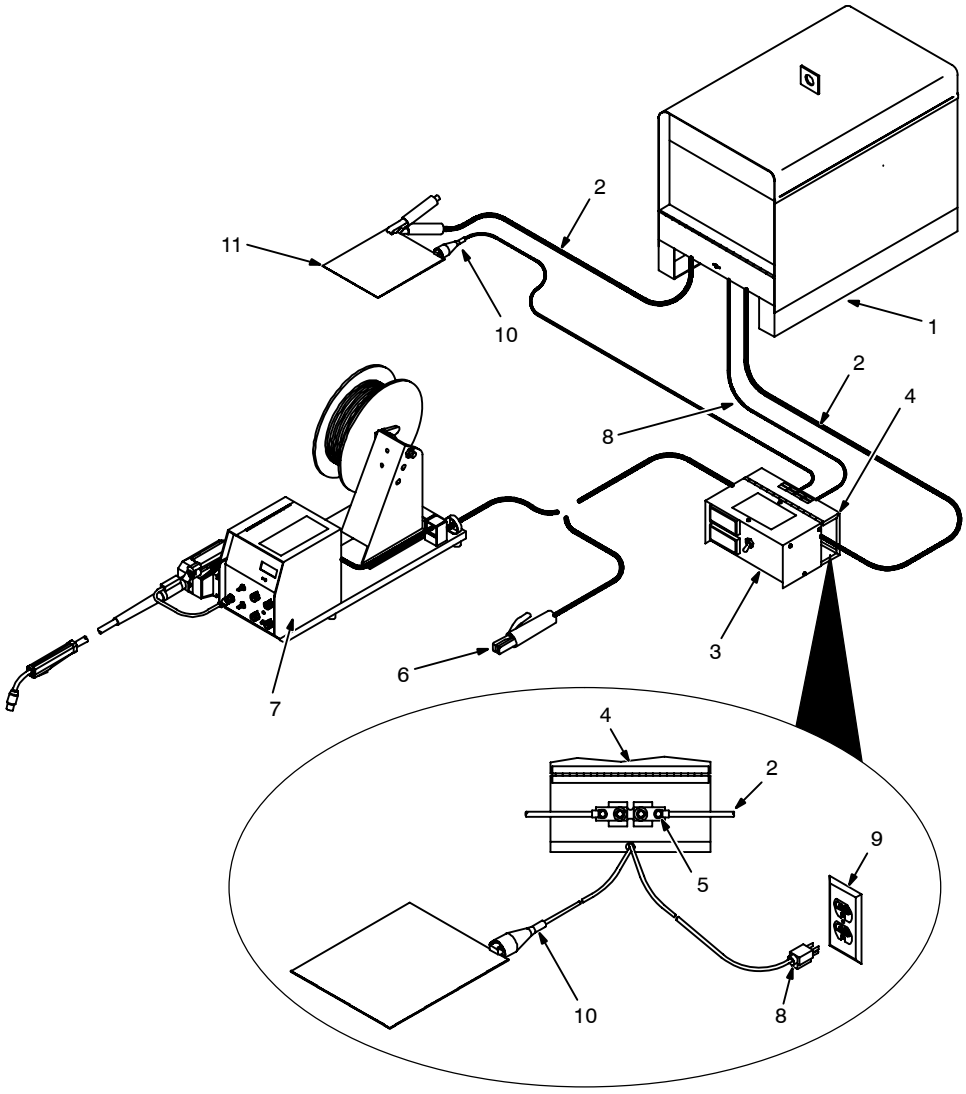
	Inches	Millimeters
A	6	152
B	11-5/8	295
C	8-3/8	213

ST-084 121-A

Figure 3-1. Overall Dimensions

3-2. Connection Diagram

⚠ WARNING **READ SAFETY BLOCKS at start of Section 3 before proceeding.**



1 CC/CV Welding Power Source

2 Weld Cable (Customer Supplied)

See power source Owner's Manual for proper size cable. Keep cable length between meter and arc as short as possible for more accurate readings.

3 Meter

4 Access Door

5 Shunt Terminal

6 Electrode Holder

7 Wire Feeder

Open access door and connect weld cable from power source to either shunt terminal. Connect weld cable from electrode holder or wire feeder to other shunt terminal.

Close access door.

8 115 VAC Cord/Plug

9 115 VAC Grounded Receptacle

Connect input power plug to welding power source or other 115 VAC receptacle.

10 Voltage Sensing Cord/Clamp

11 Workpiece

Connect voltage sensing clamp to workpiece.

ST-154 610 / ST-155 327

Figure 3-2. Connection Diagram

SECTION 4 – OPERATION

⚠ WARNING

ELECTRIC SHOCK can kill.

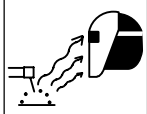
- Always wear dry insulating gloves.
- Insulate yourself from work and ground.
- Do not touch live electrical parts.
- Keep all panels and covers securely in place.

FUMES AND GASES can be hazardous to your health.

- Keep your head out of the fumes.
- Ventilate area, or use breathing device.
- Read Material Safety Data Sheets (MSDSs) and manufacturer's instructions for material used.

WELDING can cause fire or explosion.

- Do not weld near flammable material.
- Watch for fire; keep extinguisher nearby.
- Do not locate unit over combustible surfaces.
- Do not weld on closed containers.
- Allow work and equipment to cool before handling.



ARC RAYS can burn eyes and skin; NOISE can damage hearing.

- Wear welding helmet with correct shade of filter.
- Wear correct eye, ear, and body protection.

MOVING PARTS can cause injury.

- Keep away from moving parts.
- Keep all doors, panels, covers, and guards closed and securely in place.

MAGNETIC FIELDS FROM HIGH CURRENTS can affect pacemaker operation.

- Pacemaker wearers keep away.
- Wearers should consult their doctor before going near arc welding, gouging, or spot welding operations.

See Safety Precautions at beginning of manual for basic welding safety information.

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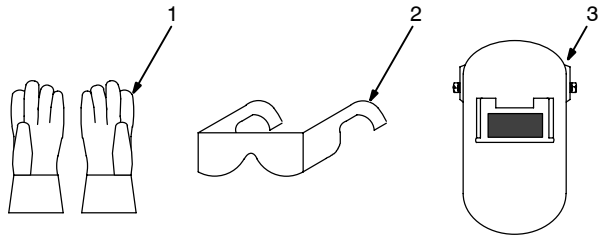

1 Insulating Gloves

2 Safety Glasses With Side Shields

3 Welding Helmet

Wear dry insulating gloves, safety glasses with side shields, and a welding helmet with a correct shade of filter (see ANSI Z49.1).

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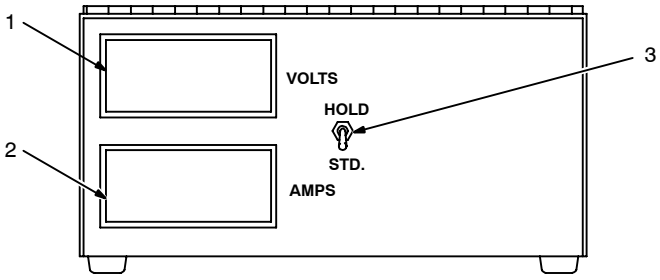
Figure 4-1. Safety Equipment



1 Voltmeter

Displays voltage to nearest 1/10 volt.

2 Ammeter

Displays amperage to nearest ampere.

3 Std./Hold Switch

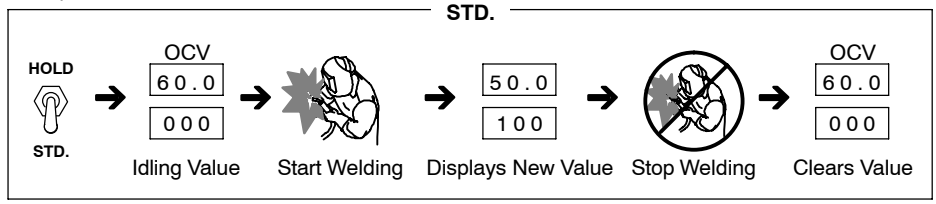
Use switch to select meters display function.

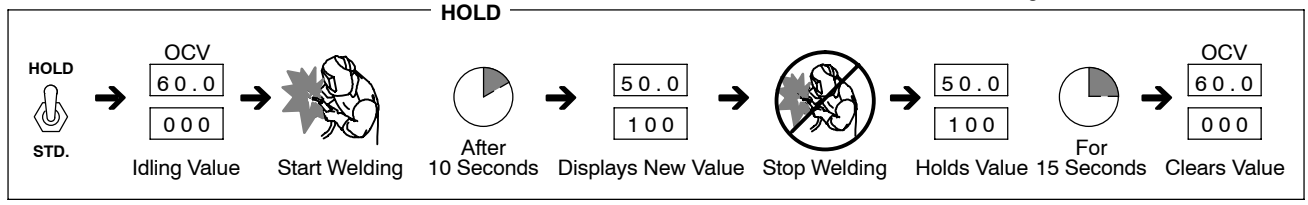
In Std. (Standard) position, meter continuously displays actual volts/amps while welding; preset value while idling.

In Hold position, meter measures volts/amps after 10 sec. of welding and holds values on displays for 15 sec. after welding stops.

Hold function does not work when welding amperage is less than 25A when using 600 model or 60A when using 1500 model.

Example:





ST-154 616

Figure 4-2. Voltmeter/Ammeter And Std./Hold Switch

SECTION 5 – MAINTENANCE & TROUBLESHOOTING

⚠ WARNING

ELECTRIC SHOCK can kill.

- Do not touch live electrical parts.
- Turn OFF welding power source, and disconnect input power before inspecting, maintaining, or servicing. Stop engine on welding generator.

HOT PARTS can cause severe burns.

- Allow cooling period before maintaining or servicing.

Maintenance and troubleshooting to be performed only by qualified persons.

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5-1. Routine Maintenance

Table 5-1. Routine Maintenance

Time	Maintenance
Every month	Normal use: none. More than normal equipment use: Repair any damaged weld cable insulation. Clean and tighten cable connections.
Every 3 months	Repair any damaged insulation or replace weld cables if necessary. Clean and tighten cable connections.
Every 6 months	Replace any labels that are unreadable or damaged (see Section 7 for part number). Remove unit outer enclosure to blow out or vacuum dust and dirt inside using a clean, dry airstream or vacuum suction.

5-2. Troubleshooting

⚠ WARNING

READ SAFETY BLOCKS at start of Section 5 before proceeding.

Table 5-2. Welding Trouble

Trouble	Remedy	Section
Unit completely inoperative; no meter display.	Be sure input power cord is plugged in and that receptacle is receiving input power.	3-2
Incorrect meter display.	Check weld cable, input power, and voltage sensing connections.	3-2
No display on one meter only; other meter works.	Check connections to meter module; tighten or clean if necessary.	– –
	Check and replace meter module if necessary.	– –
	Have Factory Authorized Service Station check Digital Meter Board PC1.	– –
Erratic meter display.	Check connections to meter shunt; tighten or clean if necessary.	– –
Meters do not hold display with STD./HOLD switch in HOLD position.	Place switch S50 in STD. position when welding amperage is below required minimum.	Figure 4-2
	Have Factory Authorized Service Station check Digital Meter Board PC1.	– –

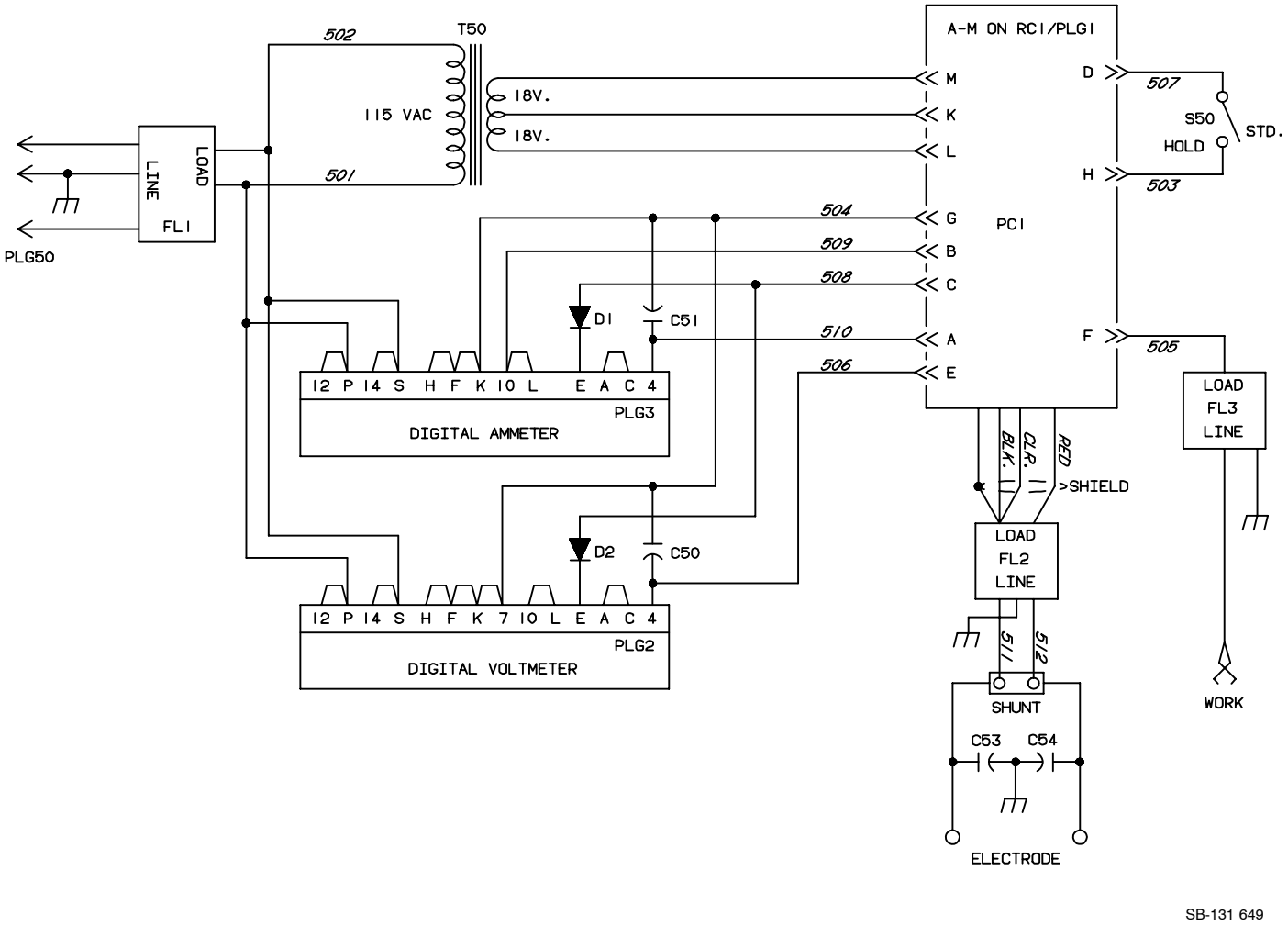

Figure 6-1. Circuit Diagram

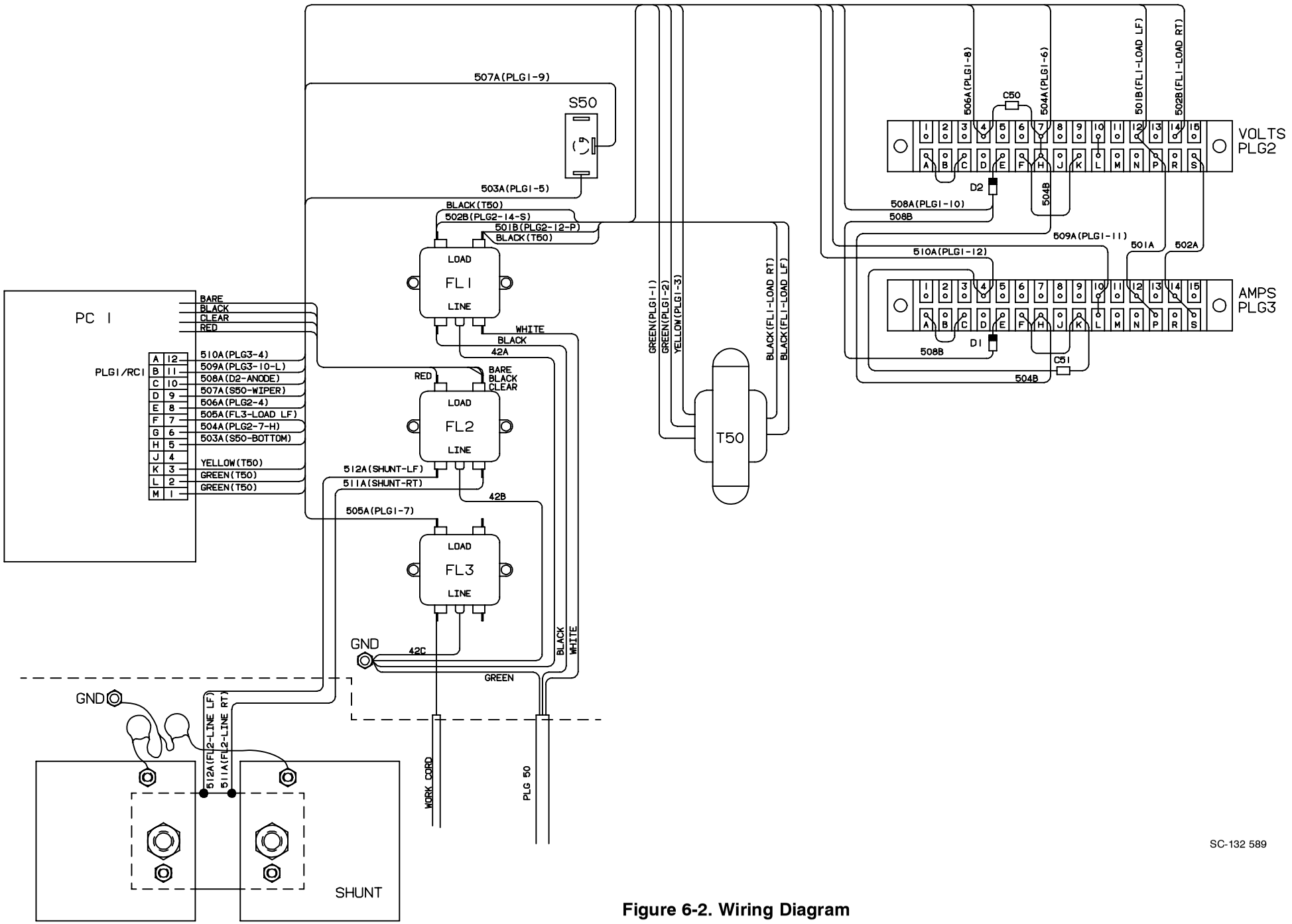

Figure 6-2. Wiring Diagram

NOTES

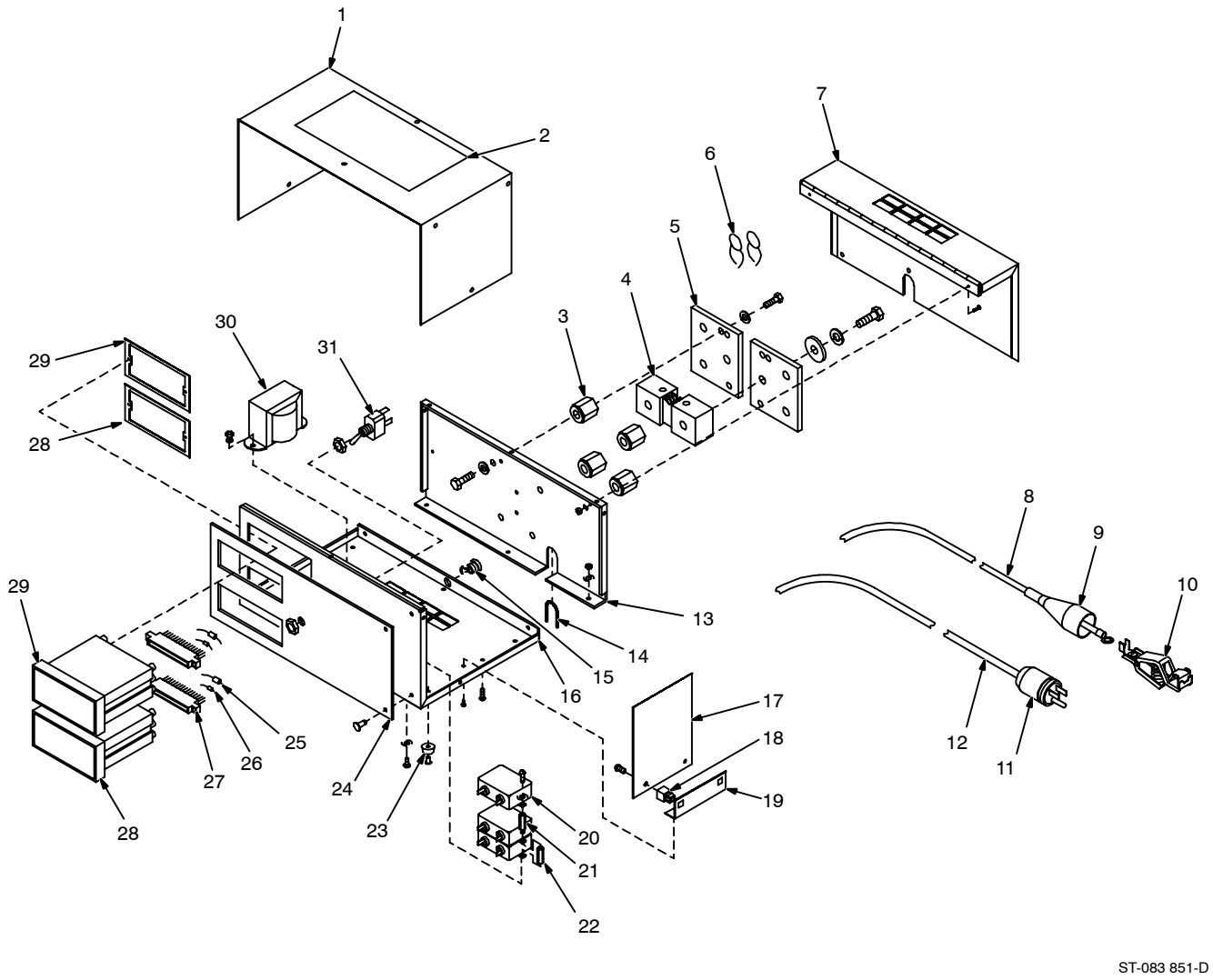

Figure 7-1. Complete Assembly (Digi-Meter 1500 Model Illustrated)

Item No.	Dia. Mkgs.	Part No.	Description	Quantity Model 600	Quantity Model 1500
Figure 7-1. Complete Assembly					
1		+082 980	WRAPPER	1	1
2		134 327	LABEL, warning general precautionary	1	1
3		025 248	STAND-OFF, insul .250-20 x 1.250 lg x .437thk		4
4	Shunt	030 084	SHUNT, meter 50MV 600A	1	
4	Shunt	072 425	SHUNT, meter 50MV 1500A		1
5		082 198	BUS BAR, jumper	2	
5		083 082	BUS BAR, jumper		2
		604 126	SCREW, cap stl hexhd .500-13 x 1.000 (connecting cables to digimeter shunt)	2	2
		602 216	WASHER, lock stl split .500 (connecting cables to digimeter shunt)	2	2
		602 247	WASHER, flat stl SAE .500 (connecting cables to digimeter shunt)	2	2
		601 879	NUT, stl hex full .500-13 (connecting cables to digitmeter shunt)	2	2
6	C53,54	143 461	CAPACITOR	2	2
7		082 983	WRAPPER, shunt	1	1
8		600 848	WIRE, lead mot 12ga strd	21ft	21ft
9		601 226	INSULATOR, vinyl clamp univ 25A	1	1
10		601 228	CLAMP, univ 25A	1	1
11	PLG50	073 690	PLUG, str grd armd 2P3W 15A 125V	1	1
12		604 825	CABLE, port No. 18 3/c (order by ft)	8ft	8ft
13		131 708	PANEL, rear	1	1
14		603 107	HOSE, nprn slit bk .156 ID x .343 OD (order by ft)	1ft	1ft
15		010 476	BUSHING, strain relief .625 ID x .570mtg hole	1	1
16		131 709	CASE SECTION, bottom/front	1	1
17	PC1	132 300	CIRCUIT CARD, digital meter 600 & 1500 models	1	
17	PC1	132 299	CIRCUIT CARD, digital meter AC/DC models		1
	PLG1	135 559	HOUSING PLUG & SOCKETS, (consisting of)	1	1
		079 747	· TERMINAL, contact hdr 24-18 wire	12	12
18		080 509	GROMMET, scr No. 8/10 panel hole .312sq .375 high	2	2
19		131 762	BRACKET, mtg PC card	1	1
20	FL1-3	084 171	FILTER, line pwr 115/250V 50-400Hz at 2A	3	3
21		132 124	STAND-OFF, No. 6-32 x 1.000 lg	2	2
22		094 484	STAND-OFF, No. 6-32 x 1.000 lg	2	2
23		019 663	MOUNT, nprn 15/16 OD	4	4
24			NAMEPLATE, (order by model and style number)	1	1
25	C50,51	122 723	CAPACITOR, cer mono 1uf 50VDC	2	2
26	D1,2	026 202	DIODE, rect 1A 400V SP	2	2
27	PLG2,3	028 598	TERMINAL, hdr 15skt	2	2
28	Amp	081 798	METER, digital 0 to 19.99V LED 115VAC	1	
28	Amp	083 722	METER, digital 0 to 19.99V		1
29	Volt	081 798	METER, digital 0 to 19.99V LED 115VAC	1	1
30	T50	131 685	TRANSFORMER, control	1	1
31	S50	011 609	SWITCH, tgl SPDT 15A 125VAC	1	1

+When ordering a component originally displaying a precautionary label, the label should also be ordered.
BE SURE TO PROVIDE MODEL AND SERIAL NUMBER WHEN ORDERING REPLACEMENT PARTS.